Editor's note: 87 I.D. 648

TEXACO, INC.

GULF OIL EXPLORATION AND PRODUCTION CO.

IBLA 80-44 Decided December 29, 1980

80-49

Appeal from a decision of the Director, Geological Survey, affirming an order of the Conservation Manager directing appellants to subscribe to and operate under a unit plan allocating production on the basis of net acre-feet. GS-145-O&G.

Affirmed.

1. Oil and Gas Leases: Drainage -- Oil and Gas Leases: Unit and Cooperative Agreements -- Outer Continental Shelf Lands Act: Oil and Gas Leases -- Outer Continental Shelf Lands Act: Unit Plans

   An order by a Conservation Manager of the Geological Survey directing oil and gas lessees of Outer Continental Shelf lands to subscribe to a unit plan allocating production from a specific reservoir on the basis of original net acre-feet of gas-bearing sand, i.e., the volume of gas-bearing sand in place prior to production of any gas

> from the reservoir, will be affirmed where such a plan of allocation of production is in common use on OCS lands and it has not been shown that the order is arbitrary or capricious.

APPEARANCES: Shirley C. Friend, Jr., Esq., New Orleans, Louisiana, for Texaco; Milton L. Duvieilh, Esq., New Orleans, Louisiana, for Gulf; Joseph C. Bell, Jr., Esq., Washington, D.C., for Shell; Charles Broome, Esq., New Orleans, Louisiana, for Exxon.

OPINION BY ADMINISTRATIVE JUDGE HENRIQUES

Texaco, Inc. (Texaco) and Gulf Oil Exploration and Production Co. (Gulf) have each appealed from the decision of the Director, Geological Survey (GS), GS-145-O&G, dated September 14, 1979, wherein the Director affirmed an order issued by the Conservation Manager, Gulf of Mexico Outer Continental Shelf (OCS) Operations, directing Texaco, Gulf, Exxon Co., U.S.A. (Exxon), and Shell Oil Co. (Shell) to subscribe to and operate under a unit plan covering a competitive gas reservoir in the Eugene Island Block 330 field, Outer Continental Shelf. The gas reservoir underlies parts of Eugene Island Block 313, 314, 331, and 332 offshore Louisiana and is situated in the "J2 Sands" within four leaseholds, OCS-G 2111 and OCS-G 2613 (Exxon), OCS-G 2116 (Shell), and OCS-G 2608 (Texaco) issued pursuant to section 8, Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1337 (Supp. II 1978). 1/ Under the unit plan, production would be allocated on the

1/ OCS lease G 2608 is held jointly by Texaco and Gulf. Texaco is the operator of the lease.

basis of the original productive net acre-feet of gas-bearing sand, i.e., the volume of gas-bearing sand in place, prior to production of any gas from the reservoir. Production was allocated as follows:

59.52776 percent to Shell, lease OCS-G 2116;

36.49844 percent to Exxon, leases OCS-G 2111 and OCS-G 2613;

3.97380 percent to Texaco, lease OCS-G 2608.

Production of gas from the reservoir commenced on Exxon's lease OCS-G 2111 in January 1974; from Shell's lease OCS-G 2116 in December 1975; from Exxon's lease OCS-G 2613 in November 1976; and from Texaco's lease OCS-G 2608, well A-11, on December 20, 1976. The Oil and Gas Supervisor, on November 16, 1976, determined that the reservoir under the Shell and Exxon leases was competitive, and thereafter on March 18, 1977, the Conservation Manager determined that the following reservoir in the Eugene Island Block 330 field should be operated under an approved plan of unitization in the interest of conservation:

Exxon leases OCS-G 2111 and OCS-G 2613	"D" Sand, reservoir C (DRC)
Shell lease OCS-G 2116	"J2" Sand, reservoir F (J2RF)
Texaco lease OCS-G 2608	"D" Sand, reservoir C (DRC)

The parties were given 6 months to submit a proposed plan of unitization of the reservoir designated as "J2RF" in the Block 330

field. However, no agreement could be reached by the lessees as to an acceptable basis for allocating the unit production from the J2RF (Shell), and DRC (Exxon and Texaco). By letter of January 5, 1978, the Conservation Manager advised the lessees that he would accept an allocation formula based on either the original net acre-feet or the original recoverable reserves and that the effective date of unitization would be April 1, 1977. The parties were allowed until February 15, 1978, to submit the plan of unitization. Except for the allocation formula, Article 13 of the unit agreement, and Exhibit C, unit participation, the lessees agreed to a plan of unitization. By letter of April 7, 1978, the Conservation Manager approved the unit agreement for the J2RF Sand, Blocks 313, 314, 331, and 332, with the allocation based on the original productive net acre-feet. Texaco and Gulf appealed to the Director, Geological Survey, who by decision of September 14, 1979, GS-145-O&G, affirmed the Conservation Manager's order.

The Director's decision after delineating the competitive nature of the reservoir and describing the unitization authority, stated:

> 3. The provisions in unit plans prescribed by a Conservation Manager must be upheld unless they are arbitrary, capricious, or constitute an abuse of discretion. The Conservation Manager exercised his authority to prescribe a unit plan only after the parties had reached an impasse following almost a year of negotiations. The terms of the unit plan here involved represent a reasonable exercise of the

Conservation Manager's discretionary authority. The order allocated the production from the reservoir to each lease on the basis of the productive net acre-feet underlying each leasehold. This is a commonly used allocation method. [Although] Gulf and Texaco are urging that production be allocated partly in terms of well producing capacity * * * the Conservation Manager properly determined that, in the absence of an agreement by the parties, allocation based on original productive net acre-feet would provide for a reasonable and equitable allocation of production.

The reserves underlying the Exxon and Shell leases are significantly greater than those underlying the Gulf-Texaco lease. Allocation based on current productivity would in effect award appellants some of the gas underlying the Shell and Exxon leases.

Moreover, the production rate of well A-11 is a point-in-time factor which is expected to change. The Texaco-Gulf well A-11 is located in an unfavorable structural position. Available data suggests that the well is located near a sealing fault which, in the case of a water-drive reservoir, is likely to contribute to an early "watering out." * * * The production history of the well supports this conclusion. During December 1977, well A-11 produced 276 barrels of water and 1,447,458 MCF of gas; during May 1978, the A-11 well produced 22,731 barrels of water and 552,825 MCF of gas.

The use of large diameter tubing is not an advanced design concept which must be "rewarded" by including productivity as an allocation parameter. * * *

Although Gulf contends that it will be unable to recoup drilling costs, Gulf has no right to expect recoupment of such costs by production of gas underlying tracts under lease to Shell or Exxon. * * *

The unit plan effective date is the first of the month following the issuance of the order requiring unitization. The effective date chosen has a rational basis, and it will therefore be upheld.

Our affirmance of the Conservation Manager's order should not be understood as implying that approval of a different unitization plan would have been unreasonable. Each unitization plan involves a great many factors which can be structured in various equitable forms.

On the ground that the issues had been extensively briefed, the Director also denied a request for oral argument.

[1] The primary issue presented by Texaco's appeal is whether or not under the facts of this case the high productivity of Texaco's A-11 well, producing from the unitized sand, should be recognized and given equity participation in the involved unit.

Texaco argues that there is nothing in OCSLA, as amended, and its implementing regulations which would prohibit or prevent productivity from being a factor in determining unit equity. To the contrary, Texaco contends, it is to the advantage of the lessor and the nation to foster productivity, and the other parties to the unit will not be improperly or unduly prejudiced thereby, citing section 102(2) and (3), OCSLA Amendments of 1978, 43 U.S.C. § 1802 (Supp. II 1978).

It is contended that the Director's decision failed to take into account and give effect to appropriate and relevant factors required in reaching a correct determination in this matter. Three substantive conclusions were made in the Director's opinion, supra, all of which, in Texaco's opinion, improperly address issues of utmost importance. Texaco believes these conclusions are unsupported by the record and offers the following reasons:

> Conclusion No. 1 outlines the authority for requiring unitization and provides for: a) prevention of waste, b) conservation of resources of the OCS, and c) protection of

correlative rights. [Section 5(a)(1), OCSLA, as amended, 43 U.S.C. § 1334 (Supp. II 1978), and 30 CFR 250.50.] The denial of Texaco's appeal is invalid primarily because protection of correlative rights is employed as an artifice to overlook or ignore both the resource-conservation principles and the prevention of waste aspects that are inherent in the directed authority.

Conclusion No. 2 states that unitization furthers the interest of conservation. Texaco continues to agree with the general principle that reservoir-wide unitization is of conservational interest. At the same time, however, Texaco contends the method of participation proposed and the denial of our appeal is not only unsupported by the records, but is also an abuse of regulatory discretion. Conclusion No. 2 attempts to promote a regulatory virtue of preventing added drilling by Exxon and Shell since their wells would constitute added potential for pollution. The conclusion thus accommodates a correlative rights aspect that ignores the desirability of improved hydrocarbon recovery from the reservoir. Texaco strongly disputes the appeal denial for ignoring so vital an issue. High producing rates unquestionably improve recovery by raising the reservoir-pressure drawdowns and reducing the residual-gas saturations remaining behind the advancing gas-water interface during depletion of partial water-drive reservoirs. Refusal to recognize such a fundamental recovery principle is invalid and contrary to law and equity. [Emphasis in original.]

Conclusion No. 3 contends that, while other participation parameters may have a justifiable basis at other times and places, acre-feet is a commonly used method and is reasonable and equitable. The conclusion states, "Our affirmance of the Conservation Manager's order should not be understood as implying that approval of a different unitization plan would have been unreasonable. Each unitization plan involves a great many factors which can be structured in various equitable forms." Denial of Texaco's appeal, we are to interpret then, is based on one corner of the triad of responsibilities given the Conservation Manager. The denial embraces protection of correlative rights by stopping Exxon and Shell from drilling additional wells and thereby adding to pollution potential. Texaco's appeal and request for inclusion of productivity as a participation factor would have allowed the Conservation Manager's exercise of responsibility to recognize in the participation formula the other two aspects, i.e., preventing underground waste and conservation of natural resources of the OCS. Eliminating the two latter aspects in the participation mechanism is improper under the circumstances and will be harmful to

> future OCS development, be repellant to the principles involved in increased hydrocarbon recovery, and will not be in the national interest of increasing gas production. Moreover, the denial of the appeal will encourage operators in the future to avoid normally prudent drilling programs endeavoring to accomplish high productivity and, on the pretense of pollution potential, encourage them to attempt to insert undrilled, unproven acreage into units with low daily producing rates. As an example, without the high productivity of the A-11 well, additional wells would be necessary to produce the reservoir at the high withdrawal rates required to maximize recovery. Similarly, had other operators completed their wells for high withdrawals, far fewer wells would have been necessary for effective depletion. Texaco must therefore conclude that waste reduction, resource conservation, and pollution potentiality are very misunderstood principles that were applied haphazardly and unfairly and far too late in the reservoir development cycle.

Additionally, Texaco asked for oral argument before the Board.

The position of Gulf is succinctly set forth in its statement of reasons on appeal:

> [Gulf] maintains the Conservation Manager's requirement that it drill prior to unitization, coupled with his unit plan allocating production by a formula which ignored the high productivity rate of the well and simultaneously resulted in appellant's lease receiving less than 4% of unit production, deprived appellant of its equitable share of unit production or the beneficial use of its leasehold and constituted a taking of property for public use without due process and compensation. The allocation formula distributing unit production on the basis of original productive net acre-feet of gas-bearing sand should be modified to include an appropriate productivity factor which recognizes the unusual productivity rate of the A-11 Well in relation to the other unit wells.
>
> * * * * * * *
>
> * * * The Conservation Manager simply is not empowered to formulate a rule or regulation, the effect of which can result in the confiscation of the lessee's equitable share

> of unit production or the beneficial use of his lease rights. The Conservation Manager's allocation formula is so onerous as applied to the facts and circumstances involved in this instance, that it can be considered nothing less than a taking without compensation as prohibited by the Fifth Amendment. The conclusion is inescapable that the Conservation Manager, in adopting the allocation formula, did not consider the impact on a federal lessee, did not consider that the federal lessee was required to drill a well to recover the reserves underlying the federal lease, and did not consider the well's superior productivity rate in the allocation formula controlling lessee's participation in unit production.

Exxon took a contrary position. Its position is well summarized in its brief to the Board from which we quote:

> Exxon believes that the Director acted correctly in affirming the Conservation Manager's order, which in Exxon's view is in the interest of conservation and allocates to each working interest owner its share of the reservoirwide unit on a basis that is fair and equitable.
>
> While Exxon believes that the record as it stands is adequate to support an affirmation of the Director's decision, it undertakes to briefly address Texaco's and Gulf's contentions in this appeal as follows:
>
> 1. Texaco argues that the Director applied an incorrect standard of review in affirming the Conservation Manager's order.
>
> Exxon does not regard this as a significant issue, since it is Exxon's belief that the order is sustainable under a wholly independent standard of review as well as under the "arbitrary, capricious, or abuse of discretion" standard.
>
> 2. Texaco contends that the Director's Conclusion No. 1 overlooks or ignores the resource conservation and waste prevention aspects of Interior's unitization authority as set out in the OCS Lands Act, and that protection of correlative rights is used as an "artifice."
>
> It is well settled that each of the three statutory criteria is in its own right a valid basis for unitization, and Exxon believes that the Department exercised

proper regulatory discretion in this instance, where both protection of correlative rights and conservation in the sense of eliminating unnecessary wells are served by the unitization order.

3. Texaco, in discussing Conclusion No. 2, takes the position that the method of participation in a unit affects reservoir management of the unitized reservoir.

Exxon maintains that reservoir management is a function of economic feasibilities and application of Petroleum Engineering principles. Method of participation in a unit has no relationship to either of these basic concepts. In Conclusion No. 2, the Director correctly recognizes that, absent unitization, wells unnecessary for draining the reservoir but necessary for the protection of correlative rights would have been drilled; thus unitization was in the interest of conservation. The Director also agrees with Exxon's contention that there are sufficient completions and future workover opportunities to adequately and efficiently drain the reservoir. This is demonstrated by the continued decline in reservoir pressure. Thus, the Director has correctly recognized fundamental reservoir management concepts.

4. Texaco contends, in discussing only part of Conclusion No. 3, that the Director's decision "is based on one corner of the triad of responsibilities given the Conservation Manager."

Exxon maintains that as reservoir pressure has been declining and is continuing to decline, economically preventable underground waste is not occurring. Further, it is established that preventing the drilling of unnecessary wells is inherently conservation of natural resources. Industry is and has been making high-volume completions. Economic and reservoir considerations, not potential unit participation interests, dictate where high-volume completions are made. In instances where a reservoir has a short life, the added cost of making a higher-volume completion could constitute economic waste. In other instances, high-volume completions eliminate the drilling of unnecessary wells, thus conserving resources and avoiding waste. The need for high-volume completions must be evaluated on the specific circumstances including experience available at the time of making the decision applicable to a given well or reservoir.

* * * * * * *

Exxon submits that the Conservation Manager's order was a reasonable exercise of regulatory discretion, and that the Director's decision sustaining it should be left undisturbed.

> Exxon does not believe that oral arguments before the Board are necessary, in view of the fact that arguments on both sides have already been thoroughly presented.

Shell asserts that the decision of the Conservation Manager allocating production on the basis of net acre-feet was proper, as the A-11 well has no characteristics which warrant preferential treatment for Texaco and Gulf, and the high level of production from the A-11 well is likely to be a transitory phenomenon. Consequently, the allocation formula adopted by the Conservation Manager best serves the interests of conservation.

In conclusion, Shell stresses that the Conservation Manager's decision to allocate production on the basis of net acre-feet is rational and supported by the evidence in the record, and it should be affirmed. Under the facts of this case, it contends an allocation formula based on the productivity of a single well at a given point in time would be contrary to the interests of conservation and, thus, in derogation of the purposes unitization is designed to serve.

Texaco and Gulf each requested the opportunity for oral argument before the Board, a request that both Shell and Exxon opposed. However, after reviewing the opening briefs and the record, the Board granted oral argument, which was heard July 22, 1980. Appearing were Shirley C. Friend, Esq., for Texaco; Milton L. Duvieilh, Esq., for Gulf; Joseph C. Bell, Jr., Esq., for Shell; and Charles Broome, Esq.,

for Exxon. Although invited to appear and participate, no representative of the Solicitor's Office appeared on behalf of Geological Survey.

At the oral argument, Texaco stated that the Eugene Island Block 330 unit under discussion is the first compulsory unit imposed by GS in the Gulf area. The argument was presented that the Texaco well, A-11, was the most prolific producer of gas in the entire Gulf and that it had contributed more than 3.97 percent of unit production. In Texaco's view, its well was drilled to protect the correlative rights of Texaco against the existing gas wells of Exxon and Shell. The A-11 was spudded in June 1976 with the drilling completed by mid-July, but the casing was not perforated nor tubing installed until December 1976 because of a lack of a pipeline connection. When the well was completed, 4-1/2-inch tubing was utilized for the production. The well produced up to 50 MMCFGD during the period from December 20, 1976, until it watered out in October 1979. Total gas produced from A-11 was in excess of 26 BCF. Accordingly, Texaco contends that the allocation of production from the unit should be based 50 percent on net acre-feet of sands and 50 percent on productivity, adverting to the method of allocation approved by GS in the Vermilion Block 320 unit.

Texaco stated that it had not been included in the original GS determination that the J2RF was competitive, even though the A-11 well

had been reported to GS prior to the date of initial determination. The J2RF unit was made effective April 1, 1977, less than 4 months after A-11 went on production. In contrast, Exxon had been producing from the reservoir for more than 3 years and Shell for more than 1 year. Production prior to the effective date of unitization was not subject to the allocation formula of the unit.

Texaco maintained that it had to drill A-11 to protect its correlative rights in the J2RF, as OCS Order No. 11 required a producing or producible well within the reservoir in order to participate in the unit agreement.

The larger tubing, 4-1/2 inch, was used to recover the hydrocarbons as quickly and economically as possible. Texaco admitted that the high production from A-11 included some drainage from both Exxon and Shell, but insisted that the high rate of withdrawal increased the ultimate recovery from the J2RF reservoir. The high recovery of A-11, Texaco maintains, was not recognized in the allocation formula based on net acre-feet. It argues that high withdrawal pressure increases ultimate recovery from water drive reservoirs, such as the J2RF, although it admitted it was unable to quantify the recovery.

In response to a question about the early watering out, Texaco stated that the life of A-11 was not abnormally short and that the order of watering out in the J2RF was Exxon's A-24, Texaco's A-11,

Shell's B-22, Shell's B-13A, and Shell's B-24ST. These wells went off production relative to their order from the west, the direction from which the water drive was coming.

Texaco admitted that it was overproduced based on the net acre-feet formula, Shell underproduced, and Exxon was about even. Lease production showed Texaco at 443 percent, Exxon Block 314 at 136 percent, Exxon Block 332 at 53 percent, and Shell at 72 percent.

Based on an allocation formula using 50 percent for net acre-feet and 50 percent for productivity, Texaco would be allocated 15.8 percent of the unit production, rather than 3.97 percent; Shell would receive 48.8 percent, instead of 59.5 percent; and Exxon would receive 35.4 percent instead of 36.5 percent.

Texaco concluded its argument with the following comments:

> [A] productivity factor is appropriate here because the high productivity rate is indicative of a special completion technique which resulted in increased hydrocarbon reserve recovery in this partial water drive reservoir and thereby aided ultimate recovery.
>
> Secondly, and these are pointed out in our brief, the high productivity rate of the A-11 well eliminated the drilling of additional wells into the reservoir since the A-11 well produced at almost three times the rate of the average unit wells. Therefore, in order to accomplish the higher reservoir production rate made possible by the A-11 well, two or three additional wells would have been necessary.
>
> Thirdly, the A-11 well has accomplished prompt and efficient development of the reservoir which would not have otherwise occurred. All consistent with the national interest, the urgency of the production of gas, consistent with

> the Secretary of Interior's urging to maximize production of hydrocarbons promptly and efficiently, and consistent with the mandates contained in section 102, paragraphs 2 and 3 of the OCS Lands Act Amendments of 1978.
>
> The failure to recognize productivity here as an equity as a part of the formula could have an adverse impact on OCS operations in connection with such matters as acting as a disincentive to future high volume completions. Secondly, discourage work overs. Third, cause operators to recomplete in other zones after they obtained their equity in the reservoir.

(Tr. 23.)

At oral argument, Gulf stated that there was sufficient data prior to its drilling A-11 to assure production from a well into the J2RF. Drilling was undertaken to protect correlative rights and keep Exxon and Shell from draining the tract. Gulf alleged that neither Texaco nor Gulf had any idea that the J2RF would be unitized, nor that if it were, the participation formula would be strictly on a net acre-foot basis. In Gulf's view, OCS Order No. 11 required Texaco-Gulf to drill a producing or producible well in order to join the unit. If the J2RF were to be unitized, it was expected GS would develop a formula consistent with the benefits of the well. Texaco's contention that a high rate of production is an advantage to total recovery was reiterated by Gulf.

Gulf argued that the net acre-feet formula is appropriate if no preunit production has occurred, but after substantial production from the reservoir before unitization is accomplished, use of original net acre-feet is not an equitable basis for allocation. It further argued that the aggressive drilling program of Texaco-Gulf should be recognized. Exxon commenced its first production from the J2RF some 36 months after its first lease issued. Shell commenced its production from J2RF some 59 months after its lease issued. Texaco-Gulf, however, achieved production in only 31 months. After production commenced from the A-11 well, Texaco-Gulf overproduced. With only 4 percent of the J2RF reserves, the A-11 produced 24 percent of reservoir yield. Shell, on the other hand, with 59.5 percent of the reserves, produced only 40 percent of the reservoir yield. That rate of production, Gulf maintains, suggests a superior sand condition for the A-11, which should be recognized in the allocation formula. In support thereof, Gulf points to the Vermilion Block 320 allocation formula utilizing productivity as a factor in the allocation of production. If the Vermilion 320 formula were applied, according to Gulf, Texaco-Gulf would receive 8 percent of the J2RF production.

Gulf reiterated the A-11 was drilled to protect correlative rights, not to participate in a unit. There are only two ways to get production, drill a well or join a unit. Under OCS Order No. 11, a lease cannot enter a unit agreement without a producing or producible well.

Counsel for Shell noted that there are eight approved unit agreements in the Eugene 330 field, all utilizing net acre-feet as the basis for allocation of production, and that Texaco-Gulf are participants in four of these units in addition to J2RF (Tr. 48). As evidence of its widespread use, Shell states that the model unit agreement provided by GS uses net acre-feet as its allocation standard, although GS may approve variants at the request of unit members (Tr. 47). Production from a unit will invariably be over or under the allocation formula for any lessee (Tr. 48).

In Shell's view, completions adequate to drain the reservoir were in place, and 4-1/2-inch tubing was unnecessary. There is no evidence, counsel maintains, that ultimate recovery of gas from the reservoir will be greater because of the use of such oversized tubing. Fast withdrawal of gas may lead to fingering and loss of the resource in such areas (Tr. 50).

Exxon's A-4A and A-13 wells have produced more gas than A-11, and given the fact that the water flood drive invades J2RF from the south-west, the Exxon wells A-4A and A-13 will probably be the longest-lived wells in the reservoir and ultimately the greatest producers by a large margin. As production had been achieved in the J2RF prior to the drilling of A-11, this is not a case, Shell contended, where any reward for early production is appropriate (Tr. 52).

In conclusion, Shell considered most important the Conservation Manager's authority and right to be considered the final decision-maker, the generalized use of net acre-feet with some presumption attaching, and the lack of any special characteristics in A-11 which entitle it to special consideration (Tr. 54).

Lastly, Exxon argued that the Conservation Manager acted reasonably in ordering unit participation based on original net acre-feet. Where, as in J2RF, there is adequate information to make a reasonably accurate acre-foot determination, a formula based on net acre-feet is the proper method for allocation of production (Tr. 57). The net acre-foot formula, Exxon maintains, has been used by GS in all OCS units, including several compulsory units. The GS model unit agreement provides for allocation of production on the basis of equivalent net acre-feet (Tr. 58).

High production from a well drilled after those of other unit members, Exxon contends, would require the earlier lessees to drill more wells unnecessarily (Tr. 61). Unitization based on a net acre-foot formula, however, conserves the number of wells, usually to the number that will economically drain the reservoir (Tr. 62). The cost of drilling a well should not have any bearing on allocation from a competitive reservoir (Tr. 60).

In their pleadings before the Board, Texaco and Gulf have argued that the allocation formula approved for the Sun-Shell unit agreement

involving the "P Sands" underlying Vermilion Blocks 320 and 321 is precedential and should be followed here. We believe the facts surrounding the Sun-Shell unit are distinguishable from those presented in this case.

In February 1971, lease OCS-G 2087 was issued to Sun for Vermilion Block 320, and lease OCS-G 2088 was issued to Shell for Vermilion Block 321. Shortly thereafter, under a joint drilling agreement, two exploratory wells were drilled on the border between the two leases. Each company then drilled additional exploratory wells within its own lease. Drilling and production platforms were erected on each lease by autumn of 1972. Sun commenced drilling its development wells in November 1972, completing its program in November 1973. Commencement of Shell's development program was delayed until April 1973. OCS Order No. 11 was issued May 1, 1974.

Before either lease was producing, Shell requested a determination that the "P Sands" were competitive. Sun commenced production in November 1974 from five drainage points through three wells. The Conservation Manager, on May 2, 1975, issued his final determination that the "P Sands" were competitive. Shell then terminated its drilling program with four completed single wells into the "P Sands" and on July 13, 1975, requested the Conservation Manager to order unitization of the "P Sands" in Blocks 320 and 321. The Conservation Manager, by decision of November 10, 1975, ordered the unitization of the "P

Sands" in Blocks 320 and 321. Neither party could agree to the terms of the proposed unit agreement, so on March 23, 1977, the Conservation Manager submitted a form of unit agreement, retroactively effective November 14, 1975, to Sun and to Shell with orders that each execute the agreement within 30 days. The unit agreement was executed by both parties on May 9, 1977.

It was determined that of the original productive volume in the "P Sands" reservoir, 81.1 percent underlay the Shell lease, and 18.9 percent underlay the Sun Lease. During the period from January 1, 1976, to June 30, 1976, while Sun and Shell were expected to negotiate a unit agreement, Sun's wells produced 54.9 percent of total reservoir production, and Shell's wells 45.1 percent. The Conservation Manager considered these figures to be representative of the reservoir production, as all wells developed by the lessees were producing. A comparison between the original reserves and the actual production showed that Shell underproduced by 36 percent in relation to the original reserves underlying its lease, while Sun overproduced by 36 percent. The Conservation Manager assigned a weighting factor of 0.36 to current production and a weighting factor of 1-0.36 to the original reserves. Using this formula, 68.14 percent of unit production was allocated to the Shell lease, and 31.86 percent to the Sun lease.

While it would have been economical for Shell to have drilled 7 more wells in 1975, 13 additional wells would have been required for

Shell to offset fully the drainage of reserves underlying its lease. As the existing wells were adequate to drain the reservoir efficiently, the Conservation Manager in the interest of conservation, adopted his formula above set forth, allocating ultimately to Sun a share of production equal to more than double the original reserves underlying its lease, an adequate reward to Sun's earlier drilling program.

In the J2RF sand unit, the original productive net acre-feet attributed to the Texaco lease was 3.97380 percent of the total, to Shell 59.52776 percent, and to Exxon 36.49844 percent. Surface acres of the Texaco lease within the J2RF sand unit are 62.04 acres, or 2.843 percent of the total. Development of the reservoir had been achieved by Exxon with five wells and by Shell with seven wells before the Texaco well went into production. Thus, the Vermilion precedent is distinguishable, as the position of Texaco in the J2RF unit cannot be equated to that of Sun in the Vermilion 320 "P Sand."

From the record it appears uncontrovertible that the extraordinarily high production from the A-11 well was due, in large part, to the oversized tubing employed in the well. Nothing in the record supports the allegation of Texaco that a superior sand condition existed on its lease within the J2RF. Accordingly, we must find that denial of productive capacity as an equity factor in the allocation of production from J2RF was not an abuse of discretion or an arbitrary and capricious act by the Conservation Manager.

It is also uncontroverted that the J2RF is a competitive reservoir as to the four leases and that Texaco had to drill the A-11 well to protect its correlative rights in the J2RF, in light of the existing wells of Exxon and Shell which probably were draining gas from the Texaco leasehold. It seems clear, however, that knowledge of the perimeter of J2RF and the geological character of the reservoir was available to Texaco prior to the time it drilled the A-11 well, as well as knowledge of the limited area of J2RF underlying the Texaco lease. It is without cavil that the A-11 well was drilled solely to protect the correlative rights of Texaco in the J2RF. After A-11 went into production, Exxon and Shell would each have been prudent to have drilled an additional well to offset A-11, although it appears that the existing wells were then adequate to deplete the J2RF. The A-11 well was the last well drilled into the J2RF. To forestall the need for drilling any additional wells into the J2RF, the Conservation Manager directed unitization of J2RF, an action within his properly delegated authority and consonant with the principles enunciated in OCSLA.

It is undeniable that the decision of a lessee to drill a well is purely a business decision and that the risks of a nonprofitable venture must be faced by the lessee alone. Thus, if the lessee does not recoup its costs because of a nonprofitable well, it has no recourse. Similarly, where a well is drilled into a competitive reservoir, for which a unit agreement is later created with allocation of production based on the original productive net acre-feet, the operator of such a

well cannot be heard to complain that it has been short-changed because its well overproduces beyond the allocated resource underlying its lease and that it must, under the unit agreement, share the greater part of its production with the other members of the unit agreement.

It has not been suggested by anyone that the prolific production from A-11 came only from the J2RF underlying the Texaco lease. Nor has it been shown that Texaco has been injured to its detriment because of earlier production from J2RF by Exxon and Shell with consequent drainage from the Texaco leasehold, where Texaco did receive the equivalent of the gas produced from the productive net acre-feet of gas-bearing sand in J2RF underlying its leasehold prior to production from the reservoir. It must be pointed out that appellants admitted that the increase in cost attributable to the use of 4-1/2-inch tubing as opposed to more standard sizes was "virtually insignificant" in relation to the total cost of the well.

Moreover, we note that while Texaco and Gulf both argued that they had, in some degree, increased the total unit production from the reservoir through use of 4-1/2-inch tubing (a contention denied by appellants), they admitted that such an increase was incapable of quantification. While we recognize the difficulties inherent in any attempt to so quantify, we think it equally obvious that absent a determined relationship between the 4-1/2-inch tubing and total recovery, appellants' method of allocating production, viz., 50 percent net

acre-feet and 50 percent current productivity, is inherently arbitrary. Without an established quantified benefit there is no reasonable basis to choose between a 50/50, a 90/10, or a 10/90 basis of allocation. While appellants have criticized the GS allocation as clearly erroneous, it is demonstrably apparent that the allocation which they advocate is, itself, intrinsically flawed given the facts presently available.

We recognize that situations will arise in which recourse to a net acre-foot allocation will not fairly treat all unit participants. We hold, however, that where an individual seeks to force GS to utilize a method of allocation other than net acre-feet, it is the obligation of the individual to clearly establish the superiority of its method of allocation given the specific factual milieu of each unitization. This has not been done here.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

Douglas E. Henriques
Administrative Judge

We concur:

James L. Burski
Administrative Judge

Edward W. Stuebing
Administrative Judge